UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Northwest Region
7600 Sand Point Way N.E., Bldg. 1
Seattle, WA 98115

Refer to:
2002/00987

July 18, 2002

Mr. Lawrence C. Evans
U.S. Army Corps of Engineers
Portland District, CENWP-CO-GP
P.O. Box 2946
Portland, Oregon 97208-2946

Re: Endangered Species Action Section 7 Formal Consultation and Magnuson-Stevens Act Essential Fish Habitat Consultation on the Portland Yacht Club Streambank Protection Project, Willow Bar Slough, Columbia River, Columbia County, Oregon (Corps No. 2001-00678).

Dear Mr. Evans:

Enclosed is a biological opinion (Opinion) prepared by the National Marine Fisheries Service (NOAA Fisheries) pursuant to section 7 of the Endangered Species Act (ESA) for the Portland Yacht Club Streambank Protection Project, Multnomah County, Oregon. NOAA Fisheries concludes in this Opinion that the proposed action is not likely to jeopardize Snake River sockeye salmon (*Oncorhynchus nerka*), Snake River fall-run chinook salmon (*O. tshawytscha*), Snake River spring/summer-run chinook salmon, Upper Columbia River spring chinook salmon, Lower Columbia River chinook salmon, Upper Willamette River chinook salmon, Columbia River chum salmon (*O. keta*), Snake River steelhead (*O. mykiss*), Upper Columbia River steelhead, Middle Columbia River steelhead, Upper Willamette River steelhead, and Lower Columbia River steelhead, or destroy or adversely modify critical habitat. Pursuant to section 7 of the ESA, NOAA Fisheries has included reasonable and prudent measures with non-discretionary terms and conditions that NOAA Fisheries believes are necessary and appropriate to minimize the potential for incidental take associated with this project.

This Opinion contains an analysis of the effects of the proposed action on designated critical habitat. Shortly before the issuance of this Opinion, however, a federal court vacated the rule designating critical habitat for some of the evolutionarily significant units considered in this Opinion. The analysis and conclusions regarding critical habitat remain informative for our application of the jeopardy standard, even though they no longer have independent legal significance. Also, if critical habitat is redesignated before this action is fully implemented, the analysis will be relevant when determining whether a reinitiation of consultation will be necessary at that time. For these reasons and the need for timely issuance of this Opinion, our critical habitat analysis has not been removed from this Opinion.

This Opinion also serves as consultation on essential fish habitat (EFH) pursuant to section 305(b) of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) and its implementing regulations (50 CFR Part 600). NOAA Fisheries concluded that the proposed action may adversely affect designated EFH for chinook salmon. As required by section 305(b)(4)(A) of the MSA, included are conservation recommendations that NOAA Fisheries believes will avoid, minimize, mitigate, or otherwise offset adverse effects on EFH resulting from the proposed action. As described in the enclosed consultation, 305(b)(4)(B) of the MSA requires that a federal action agency must provide a detailed response in writing within 30 days after receiving an EFH conservation recommendation.

Questions regarding this letter should be directed to Christy Fellas, of my staff, in the Oregon Habitat Branch at 503.231.2307.

Sincerely,

For Michael R Crouse

D. Robert Lohn
Regional Administrator

cc: Portland Yacht Club

Endangered Species Act - Section 7 Consultation

&

Magnuson-Stevens Act

Essential Fish Habitat Consultation

BIOLOGICAL OPINION

Portland Yacht Club Streambank Protection Project,
Willow Bar Slough, Columbia River,
Columbia County, Oregon

Agency:	U.S. Army Corps of Engineers
Consultation Conducted By:	NOAA Fisheries, Northwest Region
Date Issued:	July 18, 2002
Issued by:	for Michael R Course D. Robert Lohn Regional Administrator
Refer to:	**2002/00987**

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1. ENDANGERED SPECIES ACT

1.1 Background

On September 24, 2001, the National Marine Fisheries Service (NOAA Fisheries) received a letter from the Corps of Engineers (COE) requesting formal consultation on the issuance of a permit to the Portland Yacht Club for a bank stabilization project in Multnomah County, Oregon. In the December letter the COE determined that Snake River sockeye salmon (*Oncorhynchus nerka*), Snake River spring/summer-run chinook salmon (*O. tshawytscha*), Snake River fall-run chinook salmon (*O. tshawytscha*), Lower Columbia River steelhead (*O. mykiss*), Upper Columbia River steelhead (*O. mykiss*), Snake River steelhead (*O. mykiss*), Middle Columbia River steelhead (*O. mykiss*), Columbia River chum salmon (*O. keta*), Lower Columbia River chinook salmon (*O. tshawytscha*), and Upper Columbia River spring-run chinook salmon (*O. tshawytscha*) may occur within the project area and that the proposed project is "likely to adversely affect" (LAA) the subject listed species or their designated critical habitat. The NOAA Fisheries responded with a letter of nonconcurrence dated December 18, 2001, and suggested the COE request formal consultation. On April 2, 2002, the COE requested formal consultation for the proposed project. Biological references and dates of listing status, critical habitat designations and ESA section 4(d) take prohibitions are listed in Table 1.

On May 7, 2002, a federal court vacated the rule designating critical habitat (excluding listed Snake River salmon) for species considered in this opinion. The analysis and conclusions regarding critical habitat for those evolutionarily significant units (ESUs) remain informative for our application of the jeopardy standard, even though they no longer have independent legal significance. Also, if critical habitat is redesignated before this action is fully implemented, the analysis will be relevant when determining whether a reinitiation of consultation will be necessary at that time. Critical habitat for Snake River salmon ESUs remain in effect and potential impacts resulting from the proposed project are subject to jeopardy standards.

NOAA Fisheries prepared this Opinion to address affects of the proposed project on these species. The objective of this Opinion is to determine whether the subject action is likely to jeopardize the continued existence of the above listed species, or destroy or adversely modify critical habitat.

1.2 Proposed Action

The proposed action is bank stabilization to prevent erosion adjacent to an existing in-water structure. The site is located at Columbia River mile (RM) 94.4 on Willow Bar Slough, near Saint Helens, Columbia County, Oregon. The applicant proposes to slope the bank and excavate soil, to place a 133 cubic yard rock buttress at the toe. The proximity of the existing in-water structure to the bank and its use as a recreational boating dock precludes use of large wood as a construction material. Existing non-native vegetation (blackberry, weeds, and thistle) will be cleared from the slope. The sloped bank will the be layered with soil and geotech fabric. The

Table 1.1 References for Additional Background on Listing Status, Biological Information, Protective Regulations, and Critical Habitat Elements for the ESA-Listed Species Considered in this Consultation.

Species ESU	Status	Critical Habitat[1]	Protective Regulations	Biological Information, Historical Population Trends
Chinook salmon (*O. Tshawytscha*)				
Snake River fall-run	T 4/22/92; 57 FR 14653[2]	12/28/93; 58 FR 68543	7/10/00; 65 FR 42422	Waples *et al.* 1991b; Healey 1991
Snake River spring/summer run	T 4/22/92; 57 FR 14653[2]	10/25/99; 64 FR 57399[3]	7/10/00; 65 FR 42422	Matthews and Waples 1991; Healey 1991
Lower Columbia River	T 3/24/99; 64 FR 14308	2/16/00; 65 FR 7764	7/10/00; 65 FR 42422	Myers *et al.*1998; Healey 1991
Upper Willamette River	T 3/24/99; 64 FR 14308	2/16/00; 65 FR 7764	7/10/00; 65 FR 42422	Myers *et al.*1998; Healey 1991
Upper Columbia River spring-run	E 3/27/99; 64 FR 14308	2/16/00; 65 FR 7764	7/10/00; 65 FR 42422	Myers *et al.*1998; Healey 1991
Chum salmon (*O. keta*)				
Columbia River	T 3/25/99; 64 FR 14508	2/16/00; 65 FR 7764	7/10/00; 65 FR 42422	Johnson *et al.* 1997; Salo 1991
Sockeye salmon (*O. nerka*)				
Snake River	E 11/20/91; 56 FR 58619	12/28/93; 58 FR 68543	11/20/91; 56 FR 58619	Waples *et al.* 1991a; Burgner 1991
Steelhead (*O. mykiss*)				
Lower Columbia River	T 3/19/98; 63 FR 13347	2/16/00; 65 FR 7764	7/10/00; 65 FR 42422	Busby *et al.* 1995; 1996
Middle Columbia River	T 3/25/99; 64 FR 14517	2/16/00; 65 FR 7764	7/10/00; 65 FR 42422	Busby *et al.* 1995; 1996
Upper Columbia River	E 8/18/97; 62 FR 43937	2/16/00; 65 FR 7764	7/10/00; 65 FR 42422	Busby *et al.* 1995; 1996
Upper Willamette River	T 3/25/99; 64 FR 14517	2/16/00; 65 FR 7764	7/10/00; 65 FR 42422	Busby *et al.* 1995; 1996
Snake River Basin	T 8/18/97; 62 FR 43937	2/16/00; 65 FR 7764	7/10/00; 65 FR 42422	Busby *et al.* 1995; 1996

[1] Critical habitat designations (excluding Snake River stocks) were vacated and remanded on May 7, 2002 by a Federal Court

[2] Also see 6/3/92; 57 FR 23458, correcting the original listing decision by refining ESU ranges.

[3] This corrects the original designation of 12/28/93 (58 FR 68543) by excluding areas above Napias Creek Falls, a naturally impassable barrier.

surface of the slope will be covered be an erosion control blanket through which live willow stakes will be planted approximately three feet on center in a triangular pattern. A silt fence will be placed between the work area and the water to prevent debris from entering the waterway and to minimize turbidity. All work will be done from the bank and the road above it. Total project time is estimated at 10 days (if not delayed by weather conditions). If in-water work is necessary, it will take place during the in-water work window of November 1 to February 28.

1.3 Biological Information and Critical Habitat

Based on typical juvenile out-migration timing for steelhead and chinook (DeHart 2001 and Dawley *et al.* 1986) at Bonneville Dam (RM 146) and at Jones Beach (RM 47), NOAA Fisheries expects that only a few juvenile salmonids may be present in the project area (RM 94.4) during the proposed in-water work period. The proposed action would occur within designated critical habitats for SR steelhead, sockeye and chinook salmon.

The action area is defined by NOAA Fisheries regulations (50 CFR 402) as "all areas to be affected directly or indirectly by the federal action, and not merely the immediate area involved in the action." The action area includes designated critical habitats affected by the proposed action within the Columbia River. For the proposed project the action area is defined as the substrate, water, and bank immediately adjacent to the existing dock structure, along the west side of Willow Bar Slough, and downstream to the limits of any visible turbidity resulting from construction activities. The Columbia River, within the action area, serves as a migration corridor for all ESA-listed species under consideration in this Opinion. It may also serve as a feeding and rearing area for juvenile chum and sub-yearling chinook salmon. Essential features of the area for the species are: Substrate, water quality, water quantity, water temperature, water velocity, cover/shelter, food (juvenile only), riparian vegetation, space, and safe passage conditions (50 CFR 226). The essential features this proposed project may affect are: Substrate, water quality (turbidity), and riparian vegetation.

1.4 Evaluating Proposed Action

The standards for determining jeopardy are set forth in section 7(a)(2) of the ESA as defined by
50 CFR Part 402 (the consultation regulations). NOAA Fisheries must determine whether the action is likely to jeopardize the listed species and/or whether the action is likely to destroy or adversely modify designated critical habitat. This analysis involves the initial steps of defining the biological requirements and current status of the listed species and evaluating the relevance of the environmental baseline to the species' current status.

Subsequently, NOAA Fisheries evaluates whether the action is likely to jeopardize the listed species by determining if the species can be expected to survive with an adequate potential for recovery. In making this determination, NOAA Fisheries must consider the estimated level of

mortality attributable to: (1) Collective effects of the proposed or continuing action, (2) the environmental baseline, and (3) any cumulative effects. If NOAA Fisheries finds that the action is likely to jeopardize the listed species, NOAA Fisheries must identify reasonable and prudent alternatives for the action.
Furthermore, NOAA Fisheries evaluates whether the action, directly or indirectly, is likely to destroy or adversely modify the listed species' designated critical habitat. NOAA Fisheries must determine whether habitat modifications appreciably diminish the value of critical habitat for both survival and recovery of the listed species. NOAA Fisheries identifies those effects of the action that impair the function of any essential element of critical habitat. If NOAA Fisheries concludes that the action will destroy or adversely modify critical habitat, it must identify any reasonable and prudent measures available.

For the proposed action, a jeopardy analysis by NOAA Fisheries considers direct or indirect mortality of fish attributable to the action. A critical habitat analysis by NOAA Fisheries considers the extent to which the proposed action impairs the function of essential elements necessary for migration, spawning, and rearing salmon under the existing environmental baseline.

1.4.1 Biological Requirements

The first step in the methods NOAA Fisheries uses for applying the ESA to listed salmon is to define the biological requirements of the species most relevant to each consultation. NOAA Fisheries also considers the current status of the listed species taking into account population size, trends, distribution, and genetic diversity. To assess the current status of the listed species, NOAA Fisheries starts with the determinations made in its decision to list salmon for ESA protection and also considers new data available that are relevant to the determination.

The relevant biological requirements are those necessary for salmon to survive and recover to naturally-reproducing population levels at which protection under the ESA would become unnecessary. Adequate population levels must safeguard the genetic diversity of the listed stock, enhance their capacity to adapt to various environmental conditions, and allow them to become self-sustaining in the natural environment.

For this consultation, the biological requirements are improved habitat characteristics that function to support successful spawning, rearing, and migration. The current status of the listed species in this consultation, based upon their risk of extinction, has not significantly improved since the species was listed and, in some cases, their status may have worsened.

1.4.2 Environmental Baseline

The most recent evaluation of the environmental baseline for the Columbia River is part of the NOAA Fisheries's Opinion for the Federal Columbia River Power System (FCRPS) issued in December 2000. This Opinion assessed the entire Columbia River system below Chief Joseph

Dam and downstream to the farthest point (the Columbia River estuary and nearshore ocean environment) at which listed salmonids are influenced. A detailed evaluation of the environmental baseline of the Columbia River basin can be found in the FCRPS Opinion (NMFS 2000).

The quality and quantity of freshwater habitats in much of the Columbia River basin have declined dramatically in the last 150 years. Forestry, farming, grazing, road construction, hydrosystem development, mining, and urbanization have radically changed the historical habitat conditions of the basin. Depending on the species, they spend from a few days to one or two years in the Columbia River and its estuary before migrating out to the ocean and another one to four years in the ocean before returning as adults to spawn in their natal streams.

Water quality in streams throughout the Columbia River basin has been degraded by human activities such as dams and diversion structures, water withdrawals, farming and grazing, road construction, timber harvest activities, mining activities, and urbanization. Tributary water quality problems contribute to poor water quality where sediment and contaminants from the tributaries settle in mainstem reaches and the estuary. Temperature alterations also affect salmonid metabolism, growth rate, and disease resistance, as well as the timing of adult migrations, fry emergence, and smoltification. Many factors can cause high stream temperatures, but they are primarily related to land-use practices rather than point-source discharges. Loss of wetlands and increases in groundwater withdrawals have contributed to lower base-stream flows, which in turn contribute to temperature increases. Channel widening and land uses that create shallower streams also cause temperature increases.

Pollutants also degrade water quality. Salmon require clean gravel for successful spawning, egg incubation, and emergence of fry. Fine sediments clog the spaces between gravel and restrict the flow of oxygen-rich water to the incubating eggs. Excess nutrients, low levels of dissolved oxygen, heavy metals, and changes in pH also directly affect the water quality for salmon and steelhead.

Water quantity problems are also a significant cause of habitat degradation and reduced fish production. Withdrawing water for irrigation, urban, and other uses can increase temperatures, smolt travel time, and sedimentation. Return water from irrigated fields can introduce nutrients and pesticides into streams and rivers. On a larger landscape scale, human activities have affected the timing and amount of peak water runoff from rain and snowmelt. Many riparian areas, flood plains, and wetlands that once stored water during periods of high runoff have been developed. Urbanization paves over or compacts soil and increases the amount and pattern of runoff reaching rivers and streams.

Based on the best available information regarding the current status of the listed species range-wide, the population status, trends, genetics, and the poor environmental baseline conditions within the action areas, NOAA Fisheries concludes that the biological requirements of these

species are not currently being met. Degraded habitat resulting from agricultural practices, forestry practices, road building, and residential construction indicate many aquatic habitat indicators are not properly functioning within the Columbia River Basin. Actions that do not maintain or restore properly functioning aquatic habitat conditions would be likely to jeopardize the continued existence of these species.

1.5 Analysis of Effects

1.5.1 Effects of Proposed Action

Rivers are dynamic systems that perpetually alter their courses in response to multiple physical criteria. Residences and other structures constructed along waterways are subject to flooding and undercutting from these natural changes in stream course. Structural embankment hardening has been a typical means of protection for structures along waterways. As erosive forces affect different locations and landowners harden banks in response, the river eventually attains a continuous fixed alignment lacking habitat complexity (COE 1977).

Fish habitat is enhanced by the diversity of habitats at the land-water interface and adjacent bank (COE 1977). Streamside vegetation provides shade that reduces water temperature. Overhanging branches provide cover from predators. Organisms that fall from overhanging branches may be preyed upon by fish. Immersed vegetation, logs, and root wads provide points of attachment for aquatic prey organisms, shelter from swift currents during high flow events and retain bed load materials.

Large wood is central to determining channel morphology and biological condition in many Pacific Northwest streams (Spence *et al.* 1996). Pool formation, gravel and organic material retention, velocity disruption, and predatory cover for fish are all strongly reliant on large wood. Other than natural mortality, sources of large wood recruitment to streams include bank erosion, snow avalanche, mass wasting events, blow down, and transport from upstream (Gurnell *et al.* 1995). The removal of riparian vegetation can simplify aquatic habitat and reduce large wood recruitment potential (Schmetterling *et al*. 2001).

The most desirable method of bank protection is revegetation (COE 1977). However, revegetation alone can seldom stabilize banks steeper than 3:1 (vertical:horizontal) or areas of high velocity (COE 1977). Biologically less desirable, fixed structures provide the most reliable means of bank stability. The use of structural measures should be a last resort. Combining structural measures (*i.e.* mechanically stabilized earth walls) and vegetation is preferable to an unvegetated structural solution. The least preferable alternative is a vertical bulkhead (COE 1977).

The proposed action is construction of a sloped bank with a minimal rock buttress at the toe. Excavation is required to slope the bank back and to install the geotech fabric. An increase in turbidity could adversely affect fish and filter-feeding macro-invertebrates downstream of the

work site. In the short term, the proposed action could increase turbidity and debris contributions to the waterway during construction activities, particularly during storms. Willows planted on the bank are likely to provide limited shade, cover, and allochthonous input in the long term. Trees planted along top of slope should slow loss of the dynamic natural bank.

To minimize the potential for stream turbidity and direct impacts to fish, work would occur in the dry or during the Oregon Department of Fish and Wildlife recommended in-water work window. During this window fish presence is minimal with rearing juveniles potentially present, but no adult spawning or egg incubation is occurring.

As with all construction activities, accidental release of fuel, oil, and other contaminants may pollute the waterway. All equipment would be serviced away from any water bodies. Best Management Practices (BMPs) required by the Corps and/or the tate of Oregon would further minimize the potential for accidental release of hazardous materials.

1.5.2 Effects on Critical Habitat

NOAA Fisheries designates critical habitat based on physical and biological features that are essential to the listed species. Essential features of the area for listed salmon are: Substrate, water quality, water quantity, water temperature, water velocity, cover/shelter, food (juvenile only), riparian vegetation, space, and safe passage conditions (50 CFR 226). Effects to critical habitat from these categories are included in the effects description expressed above.

1.5.3 Cumulative Effects

Cumulative effects are defined in 50 CFR 402.02 as "those effects of future state or private activities, not involving federal activities, that are reasonably certain to occur within the action area of the federal action subject to consultation." Other activities within the watershed have the potential to impact fish and habitat within the action area. Future federal actions, including the ongoing operation of land management activities and highway construction that have been reviewed through separate section 7 consultation processes.

NOAA Fisheries is not aware of any specific future non-federal activities within the action area that would cause greater impacts to listed species than presently occurs. However, development of structures and vegetation clearing along the streams is likely to continue. NOAA Fisheries assumes that future private and state actions will continue at similar intensities as in recent years.

1.6 Conclusion

After reviewing the current status of listed species, the environmental baseline for the action area, the effects of the proposed action, and the cumulative effects, NOAA Fisheries has

determined that the Portland Yacht Club Bank Stabilization Project, as proposed, is not likely to jeopardize the continued existence of listed species and is not likely to destroy or adversely modify designated critical habitat. This finding is based, in part, on incorporation of the project design criteria into the proposed project design (*i.e.* establishment of vegetation to reduce bank erosion and equipment working from the bank), but also on the following considerations: (1) use of rock will be limited; (2) a silt fence will be placed between work area and the water to prevent debris from entering waterway; and (3) revegetation of the banks will result in long-term recovery of riparian resources. Thus, the proposed action is not expected to impair properly functioning habitats, appreciably reduce the functioning of already impaired habitats, or retard the long-term progress of impaired habitats toward proper functioning condition essential to the long-term survival and recovery at the population or ESU level.

1.7 Reinitiation of Consultation

This concludes formal consultation on this action in accordance with 50 CFR 402.14(b)(1). Reinitiation of consultation is required: (1) If the amount or extent of incidental take is exceeded; (2) the action is modified in a way that causes an effect on the listed species or critical habitat that was not previously considered in the biological assessment and this Opinion; (3) new information or project monitoring reveals effects of the action that may affect the listed species or critical habitat in a way not previously considered; or (4) a new species is listed or critical habitat is designated that may be affected by the action (50 CFR 402.16).

2. INCIDENTAL TAKE STATEMENT

Section 9 and rules promulgated under section 4(d) of the ESA prohibit any taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct) of listed species without a specific permit or exemption. Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, and sheltering. Harass is defined as actions that create the likelihood of injuring listed species by annoying it to such an extent as to significantly alter normal behavior patterns which include, but are not limited to,
breeding, feeding, and sheltering. Incidental take is take of listed animal species that results from, but is not the purpose of, the federal agency or the applicant carrying out an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to, and not intended as part of, the agency action is not considered prohibited taking provided that such taking is in complicance with the terms and conditions of this incidental take statement

2.1 Amount or Extent of Take

NOAA Fisheries anticipates that the proposed action covered by this Opinion has more than a negligible likelihood of incidental take resulting from the long-term removal of potential natural rearing habitat due to the use of rock, disturbance and displacement from the use of equipment, and temporary displacement of individuals due to elevated turbidity levels. Effects of actions such as these are largely unquantifiable in the short term. The effects of these activities on population levels are also largely unquantifiable and not expected to be measurable in the long term. Therefore, even though NOAA Fisheries expects some low level of non-lethal incidental take to occur due to the action covered by this Opinion, the best scientific and commercial data available are not sufficient to enable NOAA Fisheries to estimate a specific amount of incidental take to the species itself. In instances such as these, the NOAA Fisheries designates the expected level of take as "unquantifiable." Based on the information provided by the COE and other available information, NOAA Fisheries anticipates that an unquantifiable amount of incidental take could occur as a result of the action covered by this Opinion. The extent of the take is limited to the project area.

2.2 Reasonable and Prudent Measures

NOAA Fisheries believes that the following reasonable and prudent measures are necessary and appropriate to minimize take of the above species. Minimizing the amount and extent of take is essential to avoid jeopardy to the listed species.

1. Minimize incidental take from general construction by excluding unauthorized permit actions and applying permit conditions that avoid or minimize adverse effects to riparian and aquatic systems.
2. Monitor the effectiveness of the proposed conservation measures in minimizing incidental take and report to NOAA Fisheries.

2.3 Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the Act, the COE must ensure compliance with the following terms and conditions, which implement the reasonable and prudent measures described above. These terms and conditions are non-discretionary.

1. To implement Reasonable and Prudent Measure #2 (general conditions for construction, operation and maintenance), the Corps shall ensure that:

a. Timing of in-water work. Work within the active channel will be completed during the ODFW (2000) preferred in-water work period[4], as appropriate for the project area, unless otherwise approved in writing by NOAA Fisheries.

b. Cessation of work. Project operations will cease under high flow conditions that may result in inundation of the project area, except for efforts to avoid or minimize resource damage.

c. Pollution and Erosion Control Plan. A Pollution and Erosion Control Plan will be prepared and carried out to prevent pollution related to construction operations. The plan must be available for inspection on request by NOAA Fisheries.

   i. Plan Contents. The Pollution and Erosion Control Plan must contain the pertinent elements listed below, and meet requirements of all applicable laws and regulations.

      (1) Practices to prevent erosion and sedimentation associated with access roads, construction sites, haul roads, equipment and material storage sites, fueling operations and staging areas.

      (2) Practices to confine, remove and dispose of excess concrete, cement and other mortars or bonding agents, including measures for washout facilities.

      (3) A description of any hazardous products or materials that will be used for the project, including procedures for inventory, storage, handling, and monitoring.

      (4) A spill containment and control plan with notification procedures, specific clean up and disposal instructions for different products, quick response containment and clean up measures that will be available on the site, proposed methods for disposal of spilled materials, and employee training for spill containment.

      (5) Practices to prevent construction debris from dropping into any stream or water body, and to remove any material that does drop with a minimum disturbance to the streambed and water quality.

   ii. Inspection of erosion controls. During construction, all erosion controls must be inspected daily during the rainy season and weekly during the dry season to ensure they are working adequately.[5]

      (1) If inspection shows that the erosion controls are ineffective, work crews must be mobilized immediately to make repairs, install replacements, or install additional controls as necessary.

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[4] Oregon Department of Fish and Wildlife, *Guidelines for Timing of In-Water Work to Protect Fish and Wildlife Resources*, 12 pp (June 2000) (identifying work periods with the least impact on fish) (http://www.dfw.state.or.us/ODFWhtml/InfoCntrHbt/0600_inwtrguide.pdf); U.S. Army Corps of Engineers, Seattle District, Approved Work Windows for Fish Protection (Version: 13 October 2000) (http://www.nws.usace.army.mil/reg/Programmatic_Consultations/TimCond/WorkWinI.pdf)

[5] "Working adequately" means no turbidity plumes are evident during any part of the year.

(2) Sediment must be removed from erosion controls once it has reached 1/3 of the exposed height of the control.

d. Preconstruction activity. Before significant[6] alteration of the project area, the following actions must be completed.

i. Marking. Flag the boundaries of clearing limits associated with site access and construction to prevent ground disturbance of critical riparian vegetation, wetlands and other sensitive sites beyond the flagged boundary.

ii. Emergency erosion controls. Ensure that the following materials for emergency erosion control are onsite.

(1) A supply of sediment control materials (e.g., silt fence, straw bales[7]).

(2) An oil absorbing floating boom whenever surface water is present.

iii. Temporary erosion controls. All temporary erosion controls must be in-place and appropriately installed downslope of project activity within the riparian area until site restoration is complete.

e. Heavy Equipment. Use of heavy equipment will be restricted as follows.

i. Choice of equipment. When heavy equipment must be used, the equipment selected must have the least adverse effects on the environment (e.g., minimally sized, rubber tired).

ii. Vehicle staging. Vehicles must be fueled, operated, maintained and stored as follows.

(1) Vehicle staging, cleaning, maintenance, refueling, and fuel storage must take place in a vehicle staging area placed 150-feet or more from any stream, water body or wetland.

(2) All vehicles operated within 150-feet of any stream, water body or wetland must be inspected daily for fluid leaks before leaving the vehicle staging area. Any leaks detected must be repaired in the vehicle staging area before the vehicle resumes operation. Inspections must be documented in a record that is available for review on request by Corps or NOAA Fisheries.

(3) All equipment operated instream must be cleaned before beginning operations below the bankfull elevation to remove all external oil, grease, dirt, and mud.

iii. Stationary power equipment. Stationary power equipment (e.g., generators, cranes) operated within 150-feet of any stream, water body or wetland must be diapered to prevent leaks, unless otherwise approved in writing by NOAA Fisheries.

f. Site preparation. Native materials will be conserved for site restoration.

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[6] "Significant" means an effect can be meaningfully measured, detected or evaluated.

[7] When available, certified weed-free straw or hay bales must be used to prevent introduction of noxious weeds.

i. If possible, native materials must be left where they are found.

ii. Materials that are moved, damaged or destroyed must be replaced with a functional equivalent during site restoration.

iii. Any large wood[8], native vegetation, weed-free topsoil, and native channel material displaced by construction must be stockpiled for use during site restoration.

g. Earthwork. Earthwork (including drilling, excavation, dredging, filling and compacting) will be completed as quickly as possible.

i. Site stabilization. All disturbed areas must be stabilized, including obliteration of temporary roads, within 12 hours of any break in work unless construction will resume work within 7 days between June 1 and September 30, or within 2 days between October 1 and May 31.

ii. Source of materials. Boulders, rock, woody materials and other natural construction materials used for the project must be obtained outside the riparian area.

iii. Rock used to construct the buttress must be class 350 metric or larger, and must be individually placed without end dumping.

h. Site restoration. All streambanks, soils and vegetation disturbed by the project are cleaned up and restored as follows.

i. Restoration goal. The goal of site restoration is renewal of habitat access, water quality, production of habitat elements (such as large woody debris), channel conditions, flows, watershed conditions and other ecosystem processes that form and maintain productive fish habitats.

ii. Streambank shaping. Damaged streambanks must be restored to a natural slope, pattern and profile suitable for establishment of permanent woody vegetation.

iii. Revegetation. Areas requiring revegetation must be replanted before the first April 15 following construction with a diverse assemblage of species that are native to the project area or region, including grasses, forbs, shrubs and trees.

iv. Pesticides. No pesticide application is allowed, although mechanical or other methods may be used to control weeds and unwanted vegetation.

v. Fertilizer. No surface application of fertilizer may occur within 50-feet of any stream channel.

vi. Fencing. Fencing must be installed as necessary to prevent access to revegetated sites by livestock or unauthorized persons.

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[8] For purposes of this Opinion only, "large wood" means a tree, log, or rootwad big enough to dissipate stream energy associated with high flows, capture bedload, stabilize streambanks, influence channel characteristics, and otherwise support aquatic habitat function, given the slope and bankfull width of the stream in which the wood occurs. See, Oregon Department of Forestry and Oregon Department of Fish and Wildlife, *A Guide to Placing Large Wood in Streams*, May 1995 (www.odf.state.or.us/FP/RefLibrary/LargeWoodPlacemntGuide5-95.doc).

2. To implement Reasonable and Prudent Measure #2 (monitoring), the COE shall ensure that:
   a. Comprehensive monitoring will occur and a post project report prepared to ensure that these terms and conditions meet their objective of minimizing the likelihood of adverse effects to listed species and their designated critical habitat.
   b. Submit a report to NOAA Fisheries within 120 days of completing the project. Describe the COE's success meeting conservation recommendations above. Include the following information:
      i. Project identification.
      ii. Project name.
      iii. Starting and ending dates of work completed for this project.
      iv. the COE contact person.
      v. A summary of all pollution and erosion control inspection reports, including descriptions of any failures experienced with erosion control measures, efforts made to correct them and a description of any accidental spills of hazardous materials.
      vi. Documentation of the following conditions:
         (1) Finished grade slopes and elevations.
         (2) Log and rock structure elevations, orientation, and anchoring, if any.
         (3) Planting composition and density.
         (4) A plan to inspect and, if necessary, replace failed plantings and structures as required in 1(e).
         (5) A narrative assessment of the effects of the project and compensatory mitigation on natural stream function.
         (6) Photographic documentation of environmental conditions at the project site before, during and after project completion.
         (7) Photographs will include general project location views and close-ups showing details of the project area and project, including pre and post construction.
         (8) Each photograph will be labeled with the date, time, photo point, project name, the name of the photographer, and a comment describing the photograph's subject.
         (9) Relevant habitat conditions include characteristics of channels, streambanks, riparian vegetation, flows, water quality, and other visually discernable environmental conditions at the project area, and upstream and downstream of the project.
   c. Submit monitoring reports to:

      NOAA Fisheries
      Oregon Habitat Branch, Habitat Conservation Division
      Attn: 2002/00987
      525 NE Oregon Street, Suite 500
      Portland, Oregon 97232-2778

d. If a dead, injured, or sick endangered or threatened species specimen is located, initial notification must be made to the National Marine Fishery Service Law Enforcement Office, located at Vancouver Field Office, 600 Maritime, Suite 130, Vancouver, Washington 98661; telephone: 360/418-4246. Care should be taken in handling sick or injured specimens to ensure effective treatment and care or the handling of dead specimens to preserve biological material in the best possible state for later analysis of cause of death. In conjunction with the care of sick or injured endangered and threatened species or preservation of biological materials from a dead animal, the finder has the responsibility to carry out instructions provided by Law Enforcement to ensure that evidence intrinsic to the specimen is not disturbed.

3. MAGNUSON-STEVENS ACT

3.1 Magnuson-Stevens Fishery Conservation and Management Act

The Magnuson-Stevens Fishery Conservation and Management Act (MSA), as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-267), established procedures designed to identify, conserve, and enhance essential fish habitat (EFH) for those species regulated under a Federal fisheries management plan. Pursuant to the MSA:

- Federal agencies must consult with NOAA Fisheries on all actions or proposed actions authorized, funded, or undertaken by the agency that may adversely affect EFH (§305(b)(2)).
- NOAA Fisheries must provide conservation recommendations for any federal or state action that would adversely affect EFH (§305(b)(4)(A)).
- Federal agencies must provide a detailed response in writing to NOAA Fisheries within 30 days after receiving EFH conservation recommendations. The response must include a description of measures proposed by the agency for avoiding, mitigating, or offsetting the impact of the activity on EFH. In the case of a response that is inconsistent with NOAA Fisheries EFH conservation recommendations, the federal agency must explain its reasons for not following the recommendations (§305(b)(4)(B)).

EFH means those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity (MSA §3). For the purpose of interpreting this definition of EFH, "waters" include aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include aquatic areas historically used by fish where appropriate. "Substrate" includes sediment, hard bottom, structures underlying the waters, and associated biological communities. "Necessary" means the habitat required to support a sustainable fishery and the managed species' contribution to a healthy ecosystem; and "spawning, breeding, feeding, or growth to maturity" covers a species' full life cycle (50 CFR 600.10).

Adverse effect means any impact which reduces quality and/or quantity of EFH, and may include direct (*e.g.*, contamination or physical disruption), indirect (*e.g.*, loss of prey or reduction in species fecundity), site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions (50 CFR 600.810).

EFH consultation with NOAA Fisheries is required regarding any federal agency action that may adversely affect EFH, including actions that occur outside EFH, such as certain upstream and upslope activities.

The objectives of this EFH consultation are to determine whether the proposed action would adversely affect designated EFH and to recommend conservation measures to avoid, minimize, or otherwise offset potential adverse effects to EFH.

3.2 Identification of EFH

Pursuant to the MSA the Pacific Fisheries Management Council (PFMC) has designated EFH for three species of federally-managed Pacific salmon: chinook (*Oncorhynchus tshawytscha*), coho (*O. kisutch*), and Puget Sound pink salmon (*O. gorbuscha*) (PFMC 1999). Freshwater EFH for Pacific salmon includes all those streams, lakes, ponds, wetlands, and other water bodies currently, or historically accessible to salmon in Washington, Oregon, Idaho, and California, except areas upstream of certain impassable man-made barriers (as identified by the PFMC 1999), and longstanding, naturally-impassable barriers (*i.e.*, natural waterfalls in existence for several hundred years). Detailed descriptions and identifications of EFH for salmon are found in Appendix A to Amendment 14 to the Pacific Coast Salmon Plan (PFMC 1999). Assessment of potential adverse effects to these species' EFH from the proposed action is based, in part, on this information.

3.3 Proposed Action

The proposed action is detailed above in section 1.2 of this document. The action area includes a slough of the Columbia River near RM 94.4. This area has been designated as EFH for various life stages of chinook salmon, coho salmon, and starry flounder (*Platyichthys stellatus*).

3.4 Effects of Proposed Action

As described in detail in section 1.5 of this document, the proposed activity may result in short-term adverse effects to a variety of habitat parameters. These adverse effects are:

- Turbidity from excavation and rock placement.
- Disturbance of riparian vegetation.
- Possible water contamination by accidental release of fuel or oil from heavy equipment.

3.5 Conclusion

NOAA Fisheries believes that the proposed action may adversely affect the EFH for chinook salmon, coho salmon, and starry flounder.

3.6 EFH Conservation Recommendations

Pursuant to Section 305(b)(4)(A) of the MSA, NOAA Fisheries is required to provide EFH conservation recommendations to federal agencies regarding actions which may adversely affect EFH. While NOAA Fisheries understands that the conservation measures described in the BA will be implemented by the COE, it does not believe that these measures are sufficient to address the adverse impacts to EFH described above. However, the Terms and Conditions outlined in section 2.3 are generally applicable to designated EFH for chinook salmon and coho salmon and address these adverse effects. Consequently, NOAA fisheries incorporates them here as EFH conservation recommendations.

3.7 Statutory Response Requirement

Pursuant to the MSA (§305(b)(4)(B)) and 50 CFR 600.920(j), federal agencies are required to provide a detailed written response to NOAA Fisheries' EFH conservation recommendations within 30 days of receipt of these recommendations. The response must include a description of measures proposed to avoid, mitigate, or offset the adverse impacts of the activity on EFH. In the case of a response that is inconsistent with the EFH conservation recommendations, the response must explain the reasons for not following the recommendations, including the scientific justification for any disagreements over the anticipated effects of the proposed action and the measures needed to avoid, minimize, mitigate, or offset such effects.

3.8 Supplemental Consultation

The COE must reinitiate EFH consultation with NOAA Fisheries if the proposed action is substantially revised in a manner that may adversely affect EFH, or if new information becomes available that affects the basis for NOAA Fisheries' EFH conservation recommendations (50 CFR 600.920(k)).

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